

What is claimed is:

1. An isolated polynucleotide comprising a polynucleotide chosen from :
 - (a) a polynucleotide encoding a polypeptide having at least 70% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38 or fragments or analogs thereof;
 - (b) a polynucleotide encoding a polypeptide having at least 95% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38 or fragments or analogs thereof;
 - (c) a polynucleotide encoding a polypeptide comprising a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38 or fragments or analogs thereof;
 - (d) a polynucleotide encoding a polypeptide capable of generating antibodies having binding specificity for a polypeptide having a sequence chosen from SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38 or fragments or analogs thereof;
 - (e) a polynucleotide encoding an epitope bearing portion of a polypeptide having a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38 or fragments or analogs thereof;
 - (f) a polynucleotide that is complementary to a polynucleotide in (a), (b), (c), (d) or (e).
2. An isolated polynucleotide comprising a polynucleotide chosen from :
 - (a) a polynucleotide encoding a polypeptide having at least 70% identity to a second polypeptide comprising a sequence

chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38;

- (b) a polynucleotide encoding a polypeptide having at least 95% identity to a second polypeptide comprising a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38;
- (c) a polynucleotide encoding a polypeptide comprising a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38;
- (d) a polynucleotide encoding a polypeptide capable of generating antibodies having binding specificity for a polypeptide having a sequence chosen from SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38;
- (e) a polynucleotide encoding an epitope bearing portion of a polypeptide having a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 38;
- (f) a polynucleotide that is complementary to a polynucleotide in (a), (b), (c), (d) or (e).

3. The polynucleotide of claim 1, wherein said polynucleotide is DNA.
4. The polynucleotide of claim 2, wherein said polynucleotide is DNA.
5. The polynucleotide of claim 1, wherein said polynucleotide is RNA.
6. The polynucleotide of claim 2, wherein said polynucleotide is RNA.
7. The polynucleotide of claim 1 that hybridizes under stringent conditions to either

(a) a DNA sequence encoding a polypeptide or
(b) the complement of a DNA sequence encoding a polypeptide;
wherein said polypeptide comprises SEQ ID NO: 2, 4, 6, 8, 10,
12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or
fragments or analogs thereof.

8. The polynucleotide of claim 1 that hybridizes under stringent conditions to either

(a) a DNA sequence encoding a polypeptide or
(b) the complement of a DNA sequence encoding a polypeptide;
wherein said polypeptide comprises SEQ ID NO: 2, 4, 6, 8, 10,
12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38.

9. The polynucleotide of claim 1 that hybridizes under stringent conditions to either

(a) a DNA sequence encoding a polypeptide or
(b) the complement of a DNA sequence encoding a polypeptide;
wherein said polypeptide comprises at least 10 contiguous amino acid residues from a polypeptide comprising SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof.

10. The polynucleotide of claim 1 that hybridizes under stringent conditions to either

(a) a DNA sequence encoding a polypeptide or
(b) the complement of a DNA sequence encoding a polypeptide;
wherein said polypeptide comprises at least 10 contiguous amino acid residues from a polypeptide comprising SEQ ID NO: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38.

11. A vector comprising the polynucleotide of claim 1, wherein said DNA is operably linked to an expression control region.

12. A vector comprising the polynucleotide of claim 2, wherein said DNA is operably linked to an expression control region.

13. A host cell transfected with the vector of claim 11.
14. A host cell transfected with the vector of claim 12.
15. A process for producing a polypeptide comprising culturing a host cell according to claim 13 under conditions suitable for expression of said polypeptide.
16. A process for producing a polypeptide comprising culturing a host cell according to claim 14 under conditions suitable for expression of said polypeptide.
17. An isolated polypeptide comprising a member chosen from:
- (a) a polypeptide having at least 70% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof;
 - (b) a polypeptide having at least 95% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof;
 - (c) a polypeptide comprising a sequence chosen from: SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof;
 - (d) a polypeptide capable of generating antibodies having binding specificity for a polypeptide having a sequence chosen from SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof;
 - (e) an epitope bearing portion of a polypeptide having a sequence chosen from SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof;

- (f) the polypeptide of (a), (b), (c), (d) or (e) wherein the N-terminal Met residue is deleted;
- (g) the polypeptide of (a), (b), (c), (d) or (e) wherein the secretory amino acid sequence is deleted.

18. An isolated polypeptide comprising a member chosen from:

- (a) a polypeptide having at least 70% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38;
- (b) a polypeptide having at least 95% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38;
- (c) a polypeptide comprising a sequence chosen from: SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38;
- (d) a polypeptide capable of generating antibodies having binding specificity for a polypeptide having a sequence chosen from SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38;
- (e) an epitope bearing portion of a polypeptide having a sequence chosen from SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38;
- (f) the polypeptide of (a), (b), (c), (d) or (e) wherein the N-terminal Met residue is deleted;
- (g) the polypeptide of (a), (b), (c), (d) or (e) wherein the secretory amino acid sequence is deleted.

19. A chimeric polypeptide comprising two or more polypeptides having a sequence chosen from SEQ ID NOS: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof; provided that the polypeptides are linked as to form a chimeric polypeptide.

20. A chimeric polypeptide comprising two or more polypeptides having a sequence chosen from SEQ ID NOs: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38 or fragments or analogs thereof; provided that the polypeptides are linked as to formed a chimeric polypeptide.
21. A pharmaceutical composition comprising a polypeptide according to any one of claims 17 to 20 and a pharmaceutically acceptable carrier, diluent or adjuvant.
22. A method for prophylactic or therapeutic treatment of Chlamydial bacterial infection in a host susceptible to Chlamydiae infection comprising administering to said host a therapeutic or prophylactic amount of a composition according to claim 21.
23. A method according to claim 22 wherein the host is an animal.
24. A method according to claim 22 wherein the host is a human.
25. A method according to claim 22 wherein said bacterial infection is caused by *Chlamydia pneumoniae*.
26. A method according to claim 22 wherein said bacterial infection is caused by *Chlamydia psittaci*.
27. A method according to claim 22 wherein said bacterial infection is caused by *Chlamydia trachomatis*.
28. A method according to claim 22 wherein said infection causes sinusitis, pharyngitis, bronchitis, pneumonitis, asthmatic bronchitis adult-onset asthma, chronic obstructive pulmonary diseases (CDPD), atherogenesis or atherosclerosis.

29. A method for diagnostic of chlamydial bacterial infection in a host susceptible to chlamydial infection comprising administering to said host the composition of claim 21.
30. A method for diagnostic of Chlamydia infection in a host susceptible to Chlamydia infection comprising
- (a) obtaining a biological sample from a host;
 - (b) incubating an antibody or fragment thereof reactive with a Chlamydia polypeptide of any of the claims 17 to 20 with the biological sample to form a mixture; and
 - (c) detecting specifically bound antibody or bound fragment in the mixture which indicates the presence of Chlamydia.
31. A method for diagnostic of Chlamydia infection in a host susceptible to Chlamydia infection comprising
- (a) obtaining a biological sample from a host;
 - (b) incubating one or more Chlamydia polypeptides of any of the claims 17 to 20 or fragments thereof with the biological sample to form a mixture; and
 - (c) detecting specifically bound antigen or bound fragment in the mixture which indicates the presence of antibody specific to Chlamydia.
32. Use of pharmaceutical method according to claim 22 for the prophylactic or therapeutic treatment of Chlamydia bacterial infection in a host susceptible to Chlamydia infection comprising administering to said host a therapeutic or prophylactic amount of a composition according to claim 21.
33. Kit comprising a polypeptide according to any one of claims 17 to 20 for detection or diagnosis of Chlamydia infection.